

ISO 4.1 Basic Goals of an EMS

Welcome to the ISO 14001 EMS Workbook**. This project was designed to create a more user-friendly process for environmental management system construction/maintenance. Before we launch into the body of the workbook, however, we wanted to take a moment to touch on a few broad EMS goals and address some basic workbook instructions.

EMS Goals

The ISO 14001 (and this workbook) were designed based on the PDCA system of program creation/maintenance. The PDCA cycle is pasted below.



The main principle behind PDCA is continuous improvement. Your EMS should be a living document, altering as needs/opportunities arise. The PDCA system and the ISO 14001 steps ensure that your EMS remains a living document, altering as needs/opportunities arise. You will see PDCA consistently applied throughout this workbook.

As a whole, the concept of an EMS is simple. An EMS is simply a system for managing your company's environmental impacts. However, there are many varied components that need to come together for this simple principle can be realized. The first step is to adopt an environmental policy. This policy must include a commitment to compliance with environmental requirements, pollution prevention and continual improvement in environmental performance. Next, a company must analyze the environmental aspects and impacts of its business activities. From this analysis, you will develop plans and procedures to identify/achieve/maintain (PDCA cycle) compliance with environmental requirements.

Next, you will develop a process for setting environmental objectives and developing appropriate action plans to meet the objectives. In order to ensure conformance with requirements and objectives, you will then establish programs for operation control and responsibility; employee awareness/competence training, environmental emergency response; communication with employees, the public and other interested parties; and control of documents and records. Finally, you will complete yearly EMS audits to check your system's effectiveness and further continuous improvement.

This sounds like a lot of work, and it is, but this workbook is designed to make this whole process manageable. And the benefits of creating an EMS are sure to carry into the years to come for your company.

Note: For those interested in the applying for the WDNR's Green Tier program, the previous items are lifted directly from the Wisconsin Statutes for functional EMS equivalency. Completion of this workbook will fulfill EMS requirements for this program.

ISO Certification

ISO allows companies to self-certify, so third party accreditation is not needed to identify your company as ISO 14001 Certified. However, third party accreditation (by the Registration Accreditation Bureau) does lend legitimacy to your program, so you may want to consider it.

Third party accreditation is not needed for the Green Tier program.

An ISO audit will not occur unless your company is third party accredited.

Workbook Instructions

Before you begin the workbook, here are a few basic tenets to keep in mind:

- The first time to go through this process, you will complete much of the project on paper. From a brainstorming standpoint, paper is easier to work with. We have created writing sections and worksheets throughout the workbook to allow you to do this in an organized fashion.
- After completion of the first draft of your EMS, we recommend that you transfer your work into an electronic version (with at least one printed hard copy at all times). An electronic version will be much easier to revise year after year.
- At the end of each section in your binder, we have included folders. These folders are incorporated so that you will have an easy way to store any additional materials that you gather for your EMS.
- Examples in this workbook are written in Italics. These examples are designed to be illustrative of the sections requirements. While we have tried to tailor them to your business, we still recommend that you create your own version.

EMS Summary

When you have completed the workbook, it will be necessary for you to write a short 1-2 page summary of your EMS. See ISO 4.4.4 for more information.

***This document was created as a class requirement for the General Business 365-Systems Thinking and Sustainable Business, taught by Tom Eggert of the Wisconsin DNR. Parts of this document have been withdrawn in whole from the ISO 14001 requirements; others have been modified to fit this format. This project was designed for Crescendo Design, a two-person design firm, and as such, many sections/examples are catered directly to their business. While this document should be a useful tool to other companies, we do not guarantee that completing this workbook will fulfill all ISO requirements for other companies, and strongly recommend that the original ISO 14001 be referenced throughout the creation of their EMS.*

ISO 4.2 Environmental Policy

An environmental policy should consist of two basic components:

- 1. Environmental motivation and goals**
- 2. Methods for achieving these goals**

These two components can either be lumped together into paragraph form, or separated into a general statement of environmental goals, followed by bullet points outlining the methods for achieving these goals. Examples of how to write each type follow.

Type A: General statement followed by bullet points

1. Environmental motivation and goals

This section will always be in sentence form. You should be able to cover these items in 1-2 sentences. The idea is to keep this section broad and basic. To put this part of your environmental policy together, consider the following questions:

Why do we want to help the environment?

E.g. We want to help the environment, not only because it's the right thing to do, but because our business can have a significant impact on making the environment a better place for everyone.

What are our current and future environmental goals for our company? What are you committed to environmentally? (Think broad, exact timelines should not be included. You will want to keep your other business goals in mind—your EMS should be consistent with your business philosophy and fully integrated with your business practices.)

See following page for an example.

E.g. We are committed to lessening our ecological footprint on the earth through the reduction of energy in our office and use of green building materials in our projects. We are also committed to educating our contractors and clients to do the same.

This section must be appropriate to the nature, scale, and environmental impacts of your activities, products, and services.

After you have considered the above questions and guidelines, write your final environmental policy statement below:

E.g. We believe that helping the environment is the right thing to do and that we can better our environment by reducing energy use and using green building materials and designs. Our commitment to the environment also includes a commitment to educating our contractors and clients in green building practices, uses, and lifestyles.

2. Methods for achieving these goals

This section is done in bullet point form, but it should also be broad and concise. The following points were taken straight from the ISO 14001. All of them have to be included somewhere, but feel free to combine different points into one. We have included examples of how to convert these points into a more personalized form. The policy must:

- Include a commitment to continual improvement and prevention of pollution
- Include a commitment to comply with applicable legal requirements and with other requirements to which the organization subscribes which relate to its environmental aspects
- Provide the framework for setting and reviewing environmental objectives and targets
- Be documented, implemented and maintained
- Be communicated to all persons working for or on behalf of the organization
- Be available to the public

E.g.

- *We are committed to reducing and preventing waste and pollution in our office and design projects.*
- *We will comply with all legal regulations that apply to our company. We will also remain in compliance with the requirements of the ISO 14001 and the Wisconsin DNR's Green Tier program.*
- *We will create and document an environmental framework to maintain, implement and improve our environmental management system.*
- *We will ensure that our environmental policy is shared internally and externally to all interested parties.*

Write your final bullet points here:

-
-
-
-
-
-

Type B: Combine statement and bullet points into paragraph format

E.g. We believe that helping the environment is the right thing to do and that we can better our environment by reducing energy use and using green building materials and designs. Our commitment to the environment also includes a commitment to educating our contractors and clients in green building practices, uses, and lifestyles. To attain our environmental targets and objectives, we will first comply with all legal regulations that apply to our company. We will also remain in compliance with the requirements of the ISO 14001 and the Wisconsin DNR's Green Tier program. To ensure compliance, we will create and document an environmental management system and maintain, implement and constantly improve it in order to minimize our company's environmental impacts. We will share our environmental management system both internally and externally with all interested parties.

Final Statement (if you choose this type of policy):

Note: A hybrid of these two types can also be used, so long as all of the information is covered one way or another.

ISO 4.3 Planning (Identify, prioritize and set goals/objectives)

ISO 4.3.1 Identify the environmental impacts of your organization

Environmental impacts are identified through the following three stages:

1. Identify the activities of your organization
2. Break down the activities into specific aspects
3. Brainstorm how your organization's aspects impact the environment

For this section, we will break down each stage in turn and provide examples of each. Initially, it may be easier to organize the information you are gathering on paper, so worksheets are provided as they are needed.

However, continuing to use paper copies in the long run is not time efficient. So we recommend that you use the worksheets your first year, and then after your system is together, transfer the final data to an excel spreadsheet. This way you can brainstorm on paper, but will not have to rewrite the system each year.

Feel free to move back forth between stages as you get a better understanding of the format.

Stage 1: Identify the activities of your organization

Activities are the categories of business actions you undertake. These should be broad and general. For example, Design Work or Office Use would be considered activities. (In the next stage, where you identify the aspects of your organization, you will get a chance to get more specific.) The maximum total number of categories should be 5-6 items.

Some common activity categories include, but are not limited to:

- Travel
- Office use
- Products/services
- Vendors/contractors
- Consumers

List of Our Activities:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Stage 2: Break down activities into specific organizational aspects

For this section, take your list of activities and brainstorm the specific aspects included therein. These should be actions you currently are engaged in, not environmental impacts or actions you plan to take in the future. Be specific, but not too specific. Depending on the activity, you may have a larger or smaller

number of aspects. For example, here is the aspect breakdown for four of the activities mentioned in the previous section:

1. *Office use*
 - a. *Heating the building*
 - b. *Lighting the building*
 - c. *Using office equipment*
 - d. *Using paper products*
 - e. *Using inks*
 - f. *Disposing of waste*
 - g. *Using bathrooms/sinks*
 - h. *Using appliances (e.g. in kitchen/break room)*
 - i. *Etc...*
2. *Design work*
 - a. *Home design*
 - b. *Graphic/web design*
 - c. *Photography*
 - d. *Illustration*
3. *Green building education*
 - a. *Educating clients/contractors about green building materials*
 - b. *Teaching clients/contractors about green building methods*
 - c. *Educating homeowners on green built home use*
4. *Travel*
 - a. *Driving a car (yours or rental agency's)*
 - b. *Flying*
 - c. *Lodging*

Note: Especially in a section like Office Use, it can be easy to get too specific. (E.g. using inks could be broken into pen ink and printer ink, or using appliances could be broken into refrigerator, microwave, and stove.) You want to try to capture the major aspects involved, not get bogged down in the minutia of an aspect that involves little of your time/resources. That said, some aspects can be more specific than others depending on their importance to your business (e.g. if you barely use the kitchen/break room, it makes sense to keep that as one aspect—however, for a catering company, it might make more sense to break that aspect into multiple ones). Regardless, try to keep the maximum number of aspects for a given activity to 10-12 (though it is likely that most will be far fewer).

If you are having difficulty generating aspects for a certain section (e.g. interaction with contractors), it can be helpful to analyze the activity chronologically. To do this, run through all of the instances that your work lives touch. For example, first you meet with a contractor and begin a working relationship, then you meet again and hash out the details of the project that you will be working on together, etc.

A worksheet to aid in the organization of your activities/aspects analysis can be found on the following page. For now, disregard the lines labeled “EI.” We will get to those in the next stage.

Aspects/Environmental Impacts Inventory

Activity: _____

List of Aspects:

1. _____

 EI. _____

 EI. _____

 EI. _____

2. _____

 EI. _____

 EI. _____

 EI. _____

3. _____

 EI. _____

 EI. _____

 EI. _____

4. _____

 EI. _____

 EI. _____

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10. _____

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 EI. _____

 EI. _____

11. _____

 EI. _____

 EI. _____

 EI. _____

12. _____

 EI. _____

 EI. _____

 EI. _____

Stage 3: Brainstorm how your organization's aspects impact the environment

Environmental impacts are not activities or actions. EIs indicate where these actions touch the environment. **Keep in mind both pollution and sustainability issues.**

To determine environmental impacts, consider the following criteria outlined in the ISO 14001 for each aspect:

- Emissions to air
- Releases to water
- Releases to land
- Use of raw materials and natural resources
- Use of energy
- Energy emitted (e.g. heat radiation/vibration)
- Waste/byproducts
- Physical attributes (e.g. size, shape, color and appearance)

Note: Be sure to consider the exact aspect/situation unique to your organization. For example, if you drive an older car, physical attributes (e.g. wind resistance due to poor aerodynamics) might be an issue, but on a newer car, this may not have as significant of an environmental impact.

Examples of environmental impacts:

Activity 1: Office Use

1. *Heating the building*
El. Consumption of non-renewable energy resources
El. Air pollution
2. *Lighting the building*
El. Consumption of non-renewable energy resources
El. Air pollution
3. *Using office equipment*
El. Consumption of non-renewable energy resources
El. Air pollution
El. Waste generated when upgrading equipment
4. *Using paper products*
El. Waste from discarded paper
El. Commitment to sustainability by supplier/manufacturer
5. *Using inks*
El. Non-biodegradable
El. Commitment to sustainability by supplier/manufacturer
6. *Disposing of waste*
El. Methane emissions from landfills caused by biodegradable waste (Air pollution)
El. Land use
El. Groundwater contamination
7. *Using bathrooms/sinks*
El. Waste water
El. Commitment to sustainability by supplier/manufacturer of soaps
El. Energy used to heat water
8. *Using appliances (e.g. in kitchen/break room)*
El. Consumption of non-renewable energy resources
El. Air pollution
El. Waste generated by the old appliance when upgrading

Examples of environmental impacts continued...

Activity 2: Design work

Aspect 1: Home Design

- El. Basic requirements*
- El. Sitting and land use*
- El. Landscape conservation and storm water management*
- El. Energy use/efficiency*
- El. Materials selection*
- El. Indoor air quality*
- El. Plumbing and water conservation*
- El. Waste reduction*
- El. Recycling and disposal*
- El. Builder operations*
- El. Efficient Use of Space*

Aspect 2: Graphic/web design

- El. Energy use*
- El. Sustainability of supplies*
- El. Sustainability of suppliers*

Aspect 3: Photography

- El. Chemical use*
- El. Sustainability of supplies*
- El. Sustainability of suppliers*

Aspect 4: Illustration

- El. Sustainability of supplies*
- El. Sustainability of suppliers*

Activity 3: Green building education

Aspect 1: Educating clients/contractors about green building materials

- El. Sustainability of materials*
- El. Sustainability of suppliers*

Aspect 2: Teaching clients/contractors about green building methods

- El. Land use*
- El. Water pollution*
- El. Energy use*

Aspect 3: Educating homeowners on green built home use

- El. Energy use*
- El. Land use*
- El. Water use*

Activity 4: Travel

Aspect 1: Driving a car (keep in mind the specific vehicle that you use)

- El: Air pollution*
- El: Sustainability of manufacturer/provider*
- El: Consumption of non-renewable energy resources*

Aspect 2: Flying

- El: Air pollution*
- El: Consumption of non-renewable energy resources*
- El: Sustainability of manufacturer/provider*

Aspect 3: Lodging

- El: Using energy (heating/cooling, lighting)*
- El: Sustainability of provider*
- El: Water pollution (extra sheet washing/cleaning etc.)*

Now that you are familiar with the above format, return to your Aspect/Environmental Impacts Inventories and write in the EIs for each aspect.

ISO 4.3.2 Legal and other requirements

This section identifies the legal and other requirements to which the organization subscribes related to its environmental impacts. It has two components, both of which involve similar steps to complete:

1. **Legal requirements**
2. **Other requirements**

In this section, we have included check-off boxes at each step. We have also included lines for the date completed and the name of the person who complete the step. This system should help you keep track of your progress if you need to take a break from completing this section of the workbook.

1. Legal requirements

Step 1. Identify legal requirements. (The Wisconsin DNR can help you identify these requirements.)

☐ Date Completed:_____ Completed by:_____

Step 2. Compile legal requirements into a packet for easy reference

☐ Date Completed:_____ Completed by:_____

Step 3. Review legal requirements to identify any non-compliance issues (document any instances of non-compliance and save them for the next section (4.3.3))

☐ Date Completed:_____ Completed by:_____

Step 4. Check with EPA small business office yearly as a part of your EMS audit to ensure legal requirements packet is up to date. If you become aware of a new requirement prior to your yearly EMS audit, be sure to comply immediately.

☐ Date Completed:_____ Completed by:_____

2. Other requirements (e.g. Green tier, LEED, Green Built Homes, Energy Star etc.)

Step 1. Identify requirements of the program.

☐ Date Completed:_____ Completed by:_____

Step 2. Compile requirements into a packet for easy reference

☐ Date Completed:_____ Completed by:_____

Step 3. Review requirements to identify any non-compliance issues (document any instances of non-compliance and save them for the next section (4.3.3))

☐ Date Completed:_____ Completed by:_____

Step 4. Check the program requirements yearly as a part of your EMS audit to ensure continued compliance. If you become aware of a new requirement prior to your yearly EMS audit, be sure to comply immediately.

☐ Date Completed:_____ Completed by:_____

ISO 4.3.3 Objectives, Targets and Programs

This section can be broken down into four major steps:

1. Prioritize aspects by their environmental impact
2. Set objectives based on prioritization (broad)
3. Set targets based on objectives
4. Develop programs to meet targets

You are dealing with a lot of information about your business at this point. It is important not to get overwhelmed. The initial creation of an EMS requires a lot more commitment than subsequent audits. As the years pass, this information will become more familiar and manageable. It is important to keep in mind that post-prioritization you will only be looking at 4-6 different aspects.

1. Prioritize aspects by their environmental impact

***Make a copy of the aspects/environmental impacts inventory. Feel free to mark up this copy with notes.

Step 1: Identify any aspects where legal or other requirements are not currently being met. These should receive top priority and must be dealt with. (Highlight them with a marker.)

Step 2: Identify the aspects where you have the **least** control/influence over the environmental impacts. By influence we mean, though you may not have control over how a home is built by the builder, you do choose the contractor. (Eliminate these items from consideration by lining through them with a black marker.)

Step 3: Of the remaining aspects, identify those with the least environmental impact and eliminate (line through) them items as well.

Note: While you are doing completing this step, be on the look out for items that would be easy fixes (e.g. changing over to fluorescent light bulbs). Although these items may not have a huge environmental impact, it is important (and quick and easy) to address these things in addition to your major environmental programs. By identifying these items, you also give yourself the opportunity to have a few quick environmental “wins” under your belt (since many of your programs make take a longer time to realize).

Step 4: Count how many aspects remain (do not count any of the easy fixes you might have identified in step 3). If the number is greater than 6, then run through steps 2 and 3 again. Keep doing this until you have between 4-6 aspects remaining.

Step 5: Zero in on the individual environmental impacts of the remaining aspects. Choose 4-6 environmental impacts to focus on based on the criteria in steps 2 and 3.

Step 6: Look at your environmental policy. Are there any specific goals/areas of concern mentioned? If so, be sure that these are represented in your final set of aspects.

2. Set Objectives

Objectives are broad goals based on the aspects you prioritized in the previous step. These do not need to be quantitative, and should be based on the environmental impacts of the aspects. For example:

Aspect 1: Driving a car (keep in mind the specific vehicle that you use)

EI: Air pollution

Objective: Reduce harmful car emissions.

Aspect 2: Education of clients/contractors about sustainable materials

EI: Sustainability of materials

Objective: Increase clients'/contractors' use of sustainable materials

As shown above, objectives should be short and to the point.

3. Targets

For each objective:

Step 1: Gather information about the objective.

To make sure that you are collecting all of the information that you need, ask yourselves the following questions:

1. What is current state of this aspect/environmental impact? Focus on measurable details (e.g. how much gas you use per month, percentage of homes that you design that are Green Built certified, etc.).
2. What options exist for improving the environmental impact of this aspect? Try to think outside the box and utilize different resources to come up with this information.
3. What options are feasible for us to implement?

For example:

Objective: Reduce harmful car emissions

- *How much gas you use per month (to measure)*
- *Whether you can afford a hybrid car now or later (reality and time frame)*
- *Whether it is feasible to cut down on driving in general (e.g. schedule meetings at the same place after each other).*
- *Etc.*

Objective: Increase clients'/contractors' use of sustainable materials

- *The percentage of homes you design that end up Green Built certified (to measure)*
- *How much influence you have over contractors building materials decisions (reality)*
- *The availability of green materials/the cost of green materials vs. traditional materials (reality)*
- *Whether you have the time/resources to assemble a list of green supplies/suppliers (option for action)*
- *Which green building materials are likely to be accepted by contractors (reality)*
- *Etc.*

Step 2: Set your target based the information you have gathered.

For example:

Target: To reduce harmful car emissions by 15% by May 1st, 2007 (How you will hit this target will be covered in the next section on programs.)

Target: To have 30% of our home designs be Green Built certified this year (May 1st, 2006 to May 1st, 2007)

Targets need to:

- Be quantifiably measurable
- Include a time frame for achievement
- Realistic in terms of time, available resources, and other business goals

Put all information gathered in the folder in the back of this section for later reference.

4. Program

The program should identify how you are going to achieve your targets. This will include:

- Methods
- Timeline for achieving certain goals (not just a “finished by” date)
- Training needs
- Resources needed

Note: Your Company can decide to address one program at a time or multiple programs at once.

See program examples on the following pages. Blank Program worksheets follow.

Program Worksheet (Example)

<u>Program Objective:</u> <i>To reduce harmful car emissions</i>
<u>Problem Addressed:</u> <i>Air pollution from traveling by car</i>
<u>Final Target:</u> <i>To reduce emissions by 15%, as measured through gas consumption</i>
<u>Due Date:</u> <i>May 1st, 2007</i>

<u>Project Timeline:</u> <i>(Mini-targets are the goals that you plan to achieve during the year in order to achieve your final target.)</i>	<u>Program Plan: How to Achieve Targets</u> <i>(Methods, training needs, resources needed)</i>
<u>Mini-Target 1:</u> <u>Target:</u> <i>Reduce emissions by 5%</i> <u>Due Date:</u> <i>September 1st, 2006</i>	<ul style="list-style-type: none"> ■ <i>We will use information gathered in the targets section on current gas consumption. Kandy will continue to gather this information over the next year to measure our progress.</i> ■ <i>We will begin to schedule out of town appointments as efficiently as possible by scheduling multiple appointments on the same day/place, or at least the same trip. Out of town trips will decrease by 1 per month during this period.</i> ■ <i>Jon will investigate public transportation possibilities.</i> ■ <i>Total time commitment: 2 hours each</i>
<u>Mini-Target 2:</u> <u>Target:</u> <i>Increase reduced emissions to 10%</i> <u>Due Date:</u> <i>December 1st, 2006</i>	<ul style="list-style-type: none"> ■ <i>We will continue to use the methods described above, including a further reduction of out of town trips (again by a factor of 1 per month).</i> ■ <i>We will decrease emissions by turning off the engine anytime we are idle for 10 seconds or longer.</i> ■ <i>We will walk, bike, or use public transportation whenever possible.</i>
<u>Mini-Target 3: (N/A)</u> <u>Target:</u> _____ <u>Due Date:</u> _____	<ul style="list-style-type: none"> ■ ■ ■
<u>Final Target:</u> <u>Target:</u> <i>Increase reduced emissions to 15%</i> <u>Due Date:</u> <i>May 1st, 2007</i>	<ul style="list-style-type: none"> ■ <i>We will continue to use the methods described above.</i> ■ <i>In consideration for the future, we will begin saving \$500 per month towards the purchase of a hybrid car.</i> ■ <i>Total time commitment: 1 hour each</i>

Program Worksheet (Example)

<u>Program Objective:</u> <i>Increase contractors use of sustainable materials</i>
<u>Problem Addressed:</u> <i>Contractors use of unsustainable materials that can cause pollution and deplete natural resources</i>
<u>Final Target:</u> <i>To have 30% of Crescendo's home designs be Green Built certified</i>
<u>Due Date:</u> <i>May 1st, 2007</i>

<u>Project Timeline:</u> (Mini-targets are the goals that you plan to achieve during the year in order to achieve your final target.)	<u>Program Plan: How to Achieve Targets</u> (Methods, training needs, resources needed)
<u>Mini-Target 1:</u> <u>Target:</u> <i>To compile a list of green building materials</i> <u>Due Date:</u> <i>June 1st, 2006</i>	<ul style="list-style-type: none"> ▪ <i>Using the Green Built homes website as our information source, Jon will compile an excel spreadsheet with a list of green building materials.</i> ▪ <i>The spreadsheet will be comprehensive and organized by category of material and/or the material's purpose within the home.</i> ▪ <i>Total time commitment: about 10 hours of Jon's time</i>
<u>Mini-Target 2:</u> <u>Target:</u> <i>To determine preferred suppliers for each item on the green materials list</i> <u>Due Date:</u> <i>July 1st, 2006</i>	<ul style="list-style-type: none"> ▪ <i>Through supplier websites and/or Green Built homes advisors, Kandy will find suppliers for each of the items on the green materials list. We will integrate this information into the materials spreadsheet.</i> ▪ <i>Kandy will compare suppliers on cost and sustainability, choose preferred suppliers, and indicate this designation using green text.</i> ▪ <i>Total time commitment: about 15 hours of Kandy's time</i>
<u>Mini-Target 3:</u> <u>Target:</u> <i>To prioritize the list of materials by impact on the environment</i> <u>Due Date:</u> <i>September 1st, 2006</i>	<ul style="list-style-type: none"> ▪ <i>We will educate ourselves on the environmental impacts of different building materials through the Green Built homes web-site. This will allow us both to serve as experts to our contractors.</i> ▪ <i>We will prioritize the use of certain materials based on environmental impact. We will try to use the same supplier(s) whenever possible to foster supplier/contractor relationships.</i> ▪ <i>Total time commitment: 15 hours from both Jon and Kandy.</i>
<u>Final Target:</u> <u>Target:</u> <i>To have 30% of Crescendo's home designs be Green Built Certified</i> <u>Due Date:</u> <i>May 1st, 2007</i>	<ul style="list-style-type: none"> ▪ <i>We will use the materials/supplier spreadsheet to educate our contractors on sustainable building.</i> ▪ <i>To make this process as smooth as possible, we will offer to remain consultants throughout the building of the home.</i> ▪ <i>Total time commitment: variable, estimated at 20-25 hours each</i>

Program Worksheet

<u>Program Objective:</u>
<u>Problem Addressed:</u>
<u>Final Target:</u>
<u>Due Date:</u>

<u>Project Timeline:</u> (Mini-targets are the goals that you plan to achieve during the year in order to achieve your final target.)	Program Plan: How to Achieve Targets (Methods, training needs, resources needed)
Mini-Target 1: Target: _____ Due Date: _____	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>▪</div> <div>▪</div> <div>▪</div> <div>▪</div> </div>
Mini-Target 2: Target: _____ Due Date: _____	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>▪</div> <div>▪</div> <div>▪</div> </div>
Mini-Target 3: Target: _____ Due Date: _____	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>▪</div> <div>▪</div> <div>▪</div> </div>
Final Target: Target: _____ Due Date: _____	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>▪</div> <div>▪</div> <div>▪</div> </div>

ISO 4.4 Implementation and Operation

ISO 4.4.1 Resources, roles, responsibility and authority

This is the section where you outline how your environmental management system can be maintained and improved over time. This section will be shorter for smaller companies because the communication lines, roles etc. will not be as complex. Follow these four steps to complete this section:

Step 1. Set the budget of your EMS. This should be a time budget (e.g. number of hours needed per week), and a financial budget (e.g. financial resources used per month). If it makes sense to create separate budgets for 1) Initial implementation of the system and 2) system maintenance, you may do so. Just make sure your budgets reflect both what you are willing and able to do as a company. Be realistic. This budget can be altered later, but try to stick pretty closely to your original numbers. This step is a guard against burnout or over commitment.

Budget Type	Budget Amount
Establishment/Initial implementation	Time:
	\$\$:
Maintenance/Improvement	Time:
	\$\$:

Step 2: Analyze your programs from by the resources required. Use conservative estimates, you can always change it later as you gather more information. This step ensures that you have the time and money available to establish, maintain and improve your environmental management system. You should address the following resources in your analysis:

- Human resources
- Technology
- Specialized skills (e.g. consultants, time spent to learn a new skill, etc.)

Enter your estimates into the grids on the following pages. We have included separate grids for initial establishment/ implementation and subsequent program maintenance/improvement.

Establishment/Initial Implementation Resources Grid

Write the names of your programs on the blanks provided.

	Human Resources	Technology	Specialized Skills	Total per Program
Program 1: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 2: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 3: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 4: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 5: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 6: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Totals per resource:	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:

Maintenance/Improvement Resources Grid

Write the names of your programs on the blanks provided.

	Human Resources	Technology	Specialized Skills	Total per Program
Program 1: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 2: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 3: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 4: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 5: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Program 6: _____	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:
Totals per resource:	Time:	Time:	Time:	Time:
	\$\$:	\$\$:	\$\$:	\$\$:

Step 3. Compare your estimates (gray boxes in the Step 2 grids) against your budgets (Step 1). Disparities in time/money available and time/money needed must be addressed at this point. Whether you have to cut back on some of your programs or you realize that you are able to do more than you thought, the important thing is to keep in mind is that an EMS is a constantly evolving system. Even if you are not able to implement every program that you would like, there will likely be time/resources available in the future to address them.

Step 4. Now that you have the resources you need to complete the project, it is time to assign specific responsibilities/resources to specific employees (create EMS roles). In this step, you will determine how to define, document and communicate the authority, roles and responsibilities of your EMS programs.

Authority: In smaller companies, determination of authority (i.e. who will define the roles of the employees), may not apply if the authorities are also the employees filling the roles. To complete this part, list the authority(ies) below:

Roles: Roles determine which employee/position is responsible for which tasks. You can define roles in different ways. For example, you could break the work into portions by program (i.e. make a single person responsible for all aspects of a certain program), or you could break programs down into categories (e.g. program maintenance, ensuring implementation targets are hit, planning for continuous improvement, etc., with each person responsible for certain aspects of the programs). Go with whatever system makes you the most comfortable.

When you decide how you are going to define your roles/break down your responsibilities, write out your plan below. Organize each role by employee or position title. Depending on how you decide to portion the responsibilities, it may make sense to use the position description forms used here (blank copies follow). There should be a role definition for every employee or position, though depending on responsibility level, some may be much shorter than others.

Be sure to include responsibilities for system review/improvement for each program.

For example:

Note: You will not have heard of some of these responsibilities yet. They have been taken from later sections of the EMS. For right now, simply outline what responsibilities you can. You can return to this form later to add the rest.

See following pages for examples:

Position Description Worksheet (Example)

Role: Jon (Name of position or employee)

Responsibilities:

General

- Create, maintain, document and improve this environmental management system as a whole (co-responsibility with Kandy)
- Create, document and improve the organization's environmental policy (co-responsibility with Kandy)
- Analyze environmental impacts and aspects and create/maintain/document/improve yearly EMS programs (co-responsibility with Kandy)
- Maintain compliance with all legal requirements, as well as all other requirements to which the organization subscribes
- Create, maintain and document the EMS budgets. This includes the completion and maintenance of the resources grids
- Create, maintain, document and improve role designations of employees/positions
- Ensure proper document and record control/placement (co-responsibility with Kandy)
- Conduct and document periodic operational control checks
- Create, maintain, document and improve emergency preparedness and response programs
- Address all non-conformities according to the steps outlined in ISO 4.5.3 (co-responsibility with Kandy)
- Conduct a yearly audit of EMS materials and a periodic management reviews of the EMS system (co-responsibility with Kandy)

Program Specific

- Program 1: Car emission reduction
 - ☐ Investigate public transportation possibilities
 - ☐ Schedule out of town appointments as efficiently as possible (co-responsibility with Kandy)
 - ☐ Use public transportation whenever possible (co-responsibility with Kandy)
 - ☐ Turn off the engine whenever idling 10 seconds or longer (co-responsibility with Kandy)
 - ☐ Save towards the purchase of a hybrid car (co-responsibility with Kandy)
- Program 2: Increase contractors use of sustainable materials
 - ☐ Compile a list of green building materials
 - ☐ Learn details of the environmental impacts of different building materials (co-responsibility with Kandy)
 - ☐ Prioritize materials list based on environmental impacts (co-responsibility with Kandy)
 - ☐ Educate our contractors on sustainable building (co-responsibility with Kandy)
 - ☐ Remain available as a materials consultant on building projects (co-responsibility with Kandy)

Position Description Worksheet (Example)

Role: Kandy (Name of position or employee)

Responsibilities:

General

- Create, maintain document and improve this environmental management system as a whole (co-responsibility with Jon)
- Create, document and improve the organization's environmental policy (co-responsibility with Jon)
- Analyze environmental impacts and aspects and create/maintain/document/improve yearly EMS programs (co-responsibility with Jon)
- Train and communicate the environmental policy to employees and outside parties
- Research, conduct, manage, improve and document any necessary training systems/documents
- Create, maintain and improve an organized system for EMS documents and records
- Ensure proper document and record control/placement (co-responsibility with Jon)
- Create, maintain and improve internal and external communication plans (including documentation)
- Measure, monitor and document all EMS programs
- Address all non-conformities according to the steps outlined in ISO 4.5.3 (co-responsibility with Jon)

Program Specific

- Program: Car emission reduction
 - ☐ Monitor/measure gas consumption
 - ☐ Schedule out of town appointments as efficiently as possible (co-responsibility with Jon)
 - ☐ Use public transportation whenever possible (co-responsibility with Jon)
 - ☐ Turn off the engine whenever idling 10 seconds or longer (co-responsibility with Jon)
 - ☐ Save towards the purchase of a hybrid car (co-responsibility with Jon)
- Program: Increase contractors use of sustainable materials
 - ☐ Compile and prioritize a list of green building suppliers
 - ☐ Learn details of the environmental impacts of different building materials (co-responsibility with Jon)
 - ☐ Prioritize materials list based on environmental impacts (co-responsibility with Jon)
 - ☐ Educate our contractors on sustainable building (co-responsibility with Jon)
 - ☐ Remain available as a materials consultant on building projects (co-responsibility with Jon)

Position Description Worksheet

(Part 1, Page of)

Role: _____ (Name of position or employee)

Responsibilities:

General

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Position Description Worksheet

(Part 2, Page of)

Role: _____ (Name of position or employee)

Responsibilities

Program Specific

■ Program: _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

■ Program: _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

As the owners and managers of Crescendo Design, we will communicate our authority, roles and responsibilities by completing the position description worksheets. Should we ever hire other employees, we will ensure that they are aware of EMS roles and responsibilities by including them in our employee handbook.

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

ISO 4.4.2 Competence, training and awareness

The goal at this section is to ensure that you have the knowledge and skills to implement the programs you created.

Training is specifically important when you are dealing with legal or other requirements. For example, if you are dealing with certain hazardous chemicals, the law may require employees to be trained to handle them. Or for “other” requirements (e.g. Green Tier, ISO 14001, Green built homes, etc.), perhaps there is a seminar that you have to attend before calling yourselves ISO certified.

Follow these steps to determine training needs, and then write them in the “training needed” section of the program worksheets:

Step 1. Identify training needs from the program worksheets. List the training needed, and the person(s) that require the training below.

Training needed

Position/Employee

*Durability of concrete symposium
(in Milwaukee, June 5th-6th)*

Jon and Kandy

LEED Workshop or Module

Jon and Kandy

Training needed

Position/Employee

Step 2. Attend appropriate training.

Step 3. Document your training. Keep in mind these details when preparing the training records:

- Who was trained,
- The topic, date, and length
- Type of training (i.e. whether it was a classroom, one-on-one, or on-the-job training)

Be sure to include all informal learning sessions. Training records should be organized in chronological order.

If you choose, you could also take responsibility for some of the environmental training needs of your contractors/vendors or consumers. If you decide add this component to your EMS, it will be necessary to keep careful documentation of this training as well (even though they are not employees of your company).

ISO 4.4.3 Communication

In order to successfully implement your EMS and sponsor continuous improvement, good communication is key, even in a smaller company. In this section, you will outline your plans to keep communication lines running smoothly.

There are two main areas of communication to address. You should have a basic plan for each.

1. Internal communication Even in companies of only a few people, it is still important to set up a system for information sharing. This ensures that all employees are aware and responsible for their portions of the EMS and guards against unfounded assumptions.

In smaller companies, internal communication can be managed by simply setting up regular meeting times to discuss the EMS and your progress on your EMS programs. These meetings should be held at least once per month. We recommend either having a set meeting time, or setting up the next meeting before adjourning the current one.

For example:

All the people who work in the office will meet on first Tuesday of the month for EMS progress meeting in the office. At that time, each of us will report on the progresses of our EMS program (that each of us are responsible for) and discuss improvement that we can make to achieve our goal efficiently if needed. At the time, we will indicate our next meeting time and task(s) to complete.

Write your internal communication plan below.

2. External communication External communication has two components: communication initiated by the outside interested parties (e.g. the government informs you of new environmental standards), and communication initiated by your company to the outside world (e.g. identifying your business to others as a Green Tier business).

You must have a plan in place to address (receive, document and respond to) external communication initiated by outside interested parties.

Receive: Be sure that you have a way for interested parties to get a hold of you. The ability to receive information is probably already in place for most businesses. It is as simple as having a

listed and easily accessible phone number, e-mail and/or mailing address. No matter what the avenue of communication, be sure that you are checking frequently for new information.

Document: A good rule of thumb is to keep a paper trail of anything and everything related to your EMS. Keep e-mail/letter conversations and make notes of any relevant phone conversations. Be sure to keep this information organized and easily accessible.

Respond: In order to respond effectively to outside communication, you must have a internal communication plan in place so that outside information can reach the person responsible for taking action. Decide how you will do this and document it below. It is also important that you have determined whose role it is to address such information in the Role/Responsibilities section (ISO 4.4.1).

For example:

We will create a list of contact information related to our EMS project separately from our regular business. Information should have at least followings (an example is included):

<u>Organization/ Contacting person</u>	<u>Phone Numbers</u>	<u>E-mail</u>	<u>Mailing address</u>
WDNR/ Tom Eggert	(608) 267-2761	Thomas.Eggert@dnr.state.wi.us	POBox 7921, CO/7 Madison, WI 53707

The employee contacted by any of the above will keep a written record of phone conversations using the format below. All e-mails and letters must be kept and organized. This information will be shared with others within the company as needed.

The responsibility for managing external communications is assigned/documented in the roles and responsibilities section of this EMS (ISO4.4.1). The responsible employee(s) listed there will maintain external communication records and reports. We will document communications in the following format. Emails/letters will use this form as a cover sheet. Phone messages will be summarized on it.

Name of Organization/Person

Date

Subject

Write out your plan for addressing externally-initiated communication below.

You can choose whether or not participate in the second part of external communication (internally initiated environmental communication). We recommend that you participate in this type of communication (e.g. identifying your company as Green Tier), even if only to a limited extent (as you are doing currently on your website). Such an action not only raises awareness of environmental issues, but also serves as an advertising tool for your business (by attracting the environmentally conscious).

If you do decide to communicate information about your EMS to outside parties, you must define in your EMS communication plan what information you plan to share (to stay consistent) and which communication channels you are going to use.

For example:

A. Communication to contractor (non-green builder)

- 1. Create descriptions of terms and conditions of green building design on the project that we are promoting. Provide information to builders who are not familiar with green building.*
- 2. Ensure the contractor understands the options that they have in regards to building materials. We will create a list that contains information on materials that are more sustainably (green) produced. We will provide contractors with this information, as well as information on suppliers and cost of purchase.*
- 3. Ensure the contractor understands the options that they have in regards to building methods. Provide information to the contractor how to reduce environmental impact (e.g. selection of site, mitigation run off, recycling of materials used, and so forth.*
- 4. Provide information on green builder certification.*
- 5. Check with contractors to make sure that they have all of information that they need.*

B. Communication to customers

- 1. Provide general overview of green building to the customers.*
- 2. Communicate during the design process on subjects such as building site selection, energy efficiency options, green materials options (including its cost), activity options, and so on.*
- 3. Communicate after the construction on other green practices (e.g. composting, grass clipping, and so on).*

ISO 4.4.4 Documentation

If you are ever in doubt whether to document, ask yourselves the following:

- What are the consequences of documenting or not documenting?
- Do I need this information in order to demonstrate compliance with legal requirements?
- Do I need this information to ensure consistency in this activity?
- What are the advantages of documenting?
- Is it required by the ISO?

Documentation is VERY important to your EMS. Your initial documentation needs will be met by completing this EMS workbook, but here is the ISO list of items to be sure to document in your EMS. In addition, we recommend a filing system for auxiliary EMS documents kept electronic format for future use and organized by ISO numbers.

- **The environmental policy with objectives and targets**
 - This is covered by completing sections 4.2 and 4.3 of this workbook
- **Description of the scope of the environmental management system**
 - This is covered by completing section 4.4 of this workbook
- **Description of the main elements of the environmental management system and their interaction, and reference to related documents**
 - This is summary of your EMS and your current programs. When you have finished this workbook, write this summary document as an introduction to your EMS. Be sure to also include a table of contents to refer readers to more in-depth information. We remind you to write this summary in ISO 4.1.
- **Documents, including records, required by the International Standard**
 - To satisfy this requirement, simply keep all of the information that you gather in the creation/maintenance of your EMS.
- **Documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to its significant environmental aspects.**
 - This is just a catch all for everything else. Remember, when in doubt, document and keep it!

Note: As your company grows in size or scope, you may need to do more documentation organization/planning. It is important to have the proper documents available/identifiable by all who need to use them.

ISO 4.4.5 Control of documentation

You will be dealing with quite a bit of information by the time you complete this process. Organization is a key to ensuring that this information remains useful and accessible.

In addition to topic organization, make sure that every document required for the certification (see ISO 4.4.4) is adequate, legible, readily identifiable, reviewed and updated as necessary. To fulfill the requirements of this section, you must have a plan in place to ensure that documents are kept accurate and up to date. This can be a challenge if you have multiple copies of a document kept in different places. Follow these steps to create your plan:

1. Keep a filing system for auxiliary EMS documents (those that will not be included in the final EMS binder) organized by ISO numbers/names. This system will make it easy to locate the information that you are looking for.
2. Keep an electronic (or written) time/date updated stamp on all documents (like this workbook does!), so that it is easy to tell which version is the most current.
3. Keep a log of which documents are kept where (copies of documents must be kept near their point of use), so that if a document is updated, it is easy to replace.
4. Check quarterly (or whatever time frame you deem appropriate) to ensure that all documents are current and located in their appropriate place.

Write out your control of documentation plan below (this can be as simple as listing the suggestions above as statements):

ISO 4.4.6 Operational control

The goal of this section is to ensure your program procedures will effectively fulfill your environmental policy, objectives and targets. This is a check step for your program worksheets. It should guarantee the success of your program from an operational standpoint.

Consider the following items:

- Consider if there are any situations or activities where the absence of a certain procedure could lead to a significant deviation from your environmental policy or program goals/targets. If you identify such a procedure, be sure to document it in the Program worksheet's "how to" section. Note: For larger companies, this section often comprises the "meat" of their EMS. For smaller companies, however, this section is often quite short.
- Identify and communicate the details of the programs to the contractors/suppliers to whom it applies.

☐ Date completed: _____ Completed by: _____

ISO 4.4.7 Emergency preparedness and response

The aim of this section is to ensure that you are prepared for any possible emergency situations (e.g. the spilling of a hazardous chemical). For many businesses, this section may not apply, but be sure to double-check any legal requirements before completing this section. To determine your emergency needs, follow these steps.

Step 1. Identify potential environmental emergency situations and accidents

1. _____
2. _____
3. _____
4. _____
5. _____

Step 2. Review and revise your procedures for action in the event of an environmental emergency. Be sure to document these procedures and have them posted at point of use.

Emergency: _____

Procedure: _____

Emergency: _____

Procedure: _____

Emergency: _____

Procedure: _____

Emergency: _____

Procedure: _____

Emergency: _____

Procedure: _____

ISO 4.5 Checking

ISO 4.5.1 Monitoring and measurement

This is the section where you outline how your environmental management system can be monitored and measured over time. Follow these four steps to complete this section:

Step 1: Gather information on measurements for each program (already indicated on the program worksheets—ISO 4.3.3). To make sure that you are collecting all of the information that you need, ask yourselves the following questions:

- What target is measured?
- How are you going to measure the target?
- How often are you going to measure the target?

Step 2: Create a system to monitor your project. We suggest that you use the Conformance Check worksheet on the following page to gather your measurements. In addition, we recommend producing a task planner, so you can be sure to hit your target deadlines and manage your programs. We have provided an example on the next page, but you can use whatever planning system makes the most sense for you. It may be easier to integrate your EMS responsibilities directly into your current planners instead of keeping it as a separate document.

Step 3: File this document. This will be the data that you use to analyze, identify improve your programs.

Step 4: If you are using special equipment to measure your target, be sure that it is calibrated regularly according to industry standards. Fields for equipment calibration are also included on the worksheet.

Example of schedule

MAY 2006

SUNDAY	MONDAY	TUESDAY	WENDEDAY	TRUSDAY	FRIDAY	SATURDAY
1	2	3 Monthly Meeting: discuss plan of material spreadsheet (EMS#2)	4	5	6	7
8	9 Compile data-green materials (EMS#2)	10	11	12	13	14
15	16	17	18	19	20 Finish 1st draft spreadsheet (EMS#2)	21
22	23	24	25	26	27 Polish spreadsheet to present next Tuesday Meeting (EMS#2)	28
29	30					

ISO 4.5.1 Conformance Check Worksheet

Program Name: _____

Completed By: _____

Date of Measurement: _____

****Note:** All fields may not be applicable.

1. Target to be measured _____ (e.g. 5% reduction in car emission by September 1st)
2. Amount/Unit(s) _____ (e.g. amount of gas)
3. Target accomplished? YES/NO
(if the answer is NO, fill the ISO 4.5.3 Nonconformance check list)
4. Check equipment
 Equipment _____ (e.g. for this example, it is not applicable)
 It is working YES/NO
 Need to be done _____
5. Next Measurements _____ (e.g. if they are done monthly, June 1st)
(Date)

ISO 4.5.2 Evaluation of compliance

This is the section you describe how your environmental management system will comply with its legal and other requirements (ISO 4.5.2.1 & 4.5.2.2). If you have completed step 4 of section ISO 4.3.2, you have already fulfilled this requirement.

ISO 4.5.3 Nonconformity, corrective action and preventive action

This is the section where you establish a system for addressing actual or potential nonconformity(ies) and taking corrective and preventive action. In order to achieve this, follow these steps:

Step 1: Using the Nonconformance Worksheet, identify those targets that do not meet their original goal(s). For those targets that were not met, use the Nonconformance worksheet and the following steps.

Step 2: Determine the reasons for nonconformance. Ask yourself the questions at the top of the nonconformance worksheet. Check the yes/no boxes next to the question and elaborate when necessary.

Step3: Identify actions that you can take to correct nonconformity(ies) from Step 2 of your answers. Consider your answers to the previous questions. (On the nonconformance worksheet.)

Step4: Your experience with nonconformity(ies) must be reflected into the future design of the target to be measured. Discuss feasible actions to avoid nonconformity(ies), and outline them. Consider revising your targets by changing timelines/goals if you determine they are unrealistic. (On the nonconformance worksheet.)

Step5: Implement the actions identified in step 3. At this time, you must record and keep the following information in the applicable program file for each of nonconformity. (On the nonconformance worksheet.)

Nonconformance Worksheet

Program Name/Target: _____ Actual result measured: _____

1. Did you meet your target?

YES/NO

(If not, consider the following questions to identify the reason(s) of nonconformity)

2. The reason(s) of nonconformity:

a) What actions did you take since the last assessment to achieve your target?

b) Issues in implementation/monitoring

c) Problems in a mechanics/procedure

d) Problems attaining the resources necessary for achieving the target:

Human resources

Financial

Technology

Training

Other

e) Measurable target

YES/NO (provide specifics in below)

f) Realistic and achievable target within given time and resources

YES/NO (provide specifics in below)

g) Other factor that led to nonconformance

3. The actions that you took to correct nonconformity (changes that you made from original target):

4. The results of corrected action:

5. The changes and new guidelines to prevent nonconformity (These guidelines provide you with the flexibility to change your EMS to fit the current state of your business):

(Completed by)

(Date)

Received by Manager:

(Date)

ISO 4.5.4 Control of records

Once again, this is a section to ensure you keep maintain, update and make your records/documents available. Note: This control has already been integrated into this workbook. Refer the ISO section 4.4.5 (Control of documentation) for additional information.

ISO 4.5.5 Internal audit

You should conduct a yearly audit of your EMS. We recommend adopting the system on laid out on the following pages for your audit.

The goal of the audit is to:

- 1.** Make sure everything is present in your EMS. Assess success / shortcomings of the content of your EMS.
- 2.** Assess how well your EMS worked: Did your EMS help you make environmental progress during the year? Assess success / shortcomings of the effectiveness of your EMS.
- 3.** Review entire EMS and integrate any changes that occurred over the last year
- 4.** Provide the information needed to set EMS programs for the following year (these plans will be outlined in 4.6)
- 5.** Foster continuous improvement of your EMS

If you are performing your own audit, you will not need to address the following. If you are outsourcing, be sure to document the following:

- The requirements for planning
- The persons who will conduct the audit, and what procedures will they use
- How results will be reported
- The audit criteria, scope, frequency, and methods

ISO 4.6 Management Review

In companies where upper management also manages the EMS, the management review will not include much work above and beyond the audit. To complete this section, gather the following materials together:

- Results of internal audits (ISO 4.5.5) and evaluations of compliance with legal requirements and with other requirements to which the organization subscribes.
- Communication(s) from external interested parties, including complaints
- The extent to which objectives and targets have been met
- The status of corrective and preventative actions
- Follow-up actions from previous management reviews
- Changing circumstances, including developments in legal and other requirements related to environmental aspects (ISO 4.3.2)
- Recommendations for improvement (gathered from employees, outside parties, etc.)

The goal of a management review is for upper management to set the basic plan for the following year (management reviews can be conducted more than yearly if you so choose). This plan is then communicated to the EMS manager, who will handle actual program creation, implementation, documentation, monitoring, etc. The EMS manager will consider management's review of the above information and then complete ISO steps 4.3 and 4.4 again.

we will remind you to write this summary at the end of this workbook.

Note: EMS program is a continuous improving process. Once you established, implement, check, improve the EMS, Manager of the EMS must know how the EMS system worked and what they produced. Then take a leadership to identify the problem, re-set goal(s), and manage new EMS system to meet its goal(s). In order to continuously improve the system, you must proceed this cycle: establish, implement, check, identify the problem, re-establish system.